

is the combination of a gas stream that has a swirling movement about a predetermined axis, one gas stream moving straight in the direction of the axis in the inner portion of the swirling stream and another gas stream also moving straight in the direction of the axis the another gas stream wrapping around the swirling stream and the one straight gas stream;

- (b) supplying a flow of liquid into the formed gas stream so that the flow of liquid is atomized by the formed gas stream; and
- (c) advancing a web of hygroscopic material across the atomized liquid flow.

A method of wetting webs of paper or other hygroscopic material. The method comprises:

- (a) arranging at least first and second atomizing nozzles in an array wherein the at least first and second nozzles are adjacent to each other;
- (b) forming internal to each of the at least first and second nozzles a mixed gas stream that is the combination of a gas stream that has a swirling movement about a predetermined axis, one gas stream moving straight in the direction of the axis in the inner portion of the swirling stream and another gas stream also moving straight in the direction of the axis the another gas stream wrapping around the swirling stream and the one straight gas stream;
- (c) supplying a flow of liquid into the formed gas stream so that the flow of liquid is atomized by the formed gas stream; and
- (d) advancing a web of hygroscopic material across the atomized liquid flow.

A method of wetting webs of paper or other hygroscopic material using an atomizing nozzle. The method comprises:

- (a) creating an array of the atomizing nozzles;
- (b) forming internal to each of the nozzles a mixed gas